

## **REMARKS**

The Office Action dated October 11, 2005, has been received and carefully noted. The above amendments and following remarks are submitted as a full and complete response thereto.

Claims 1-21 are currently pending, of which claims 1, 7, 13, and 16 are independent claims. Claims 13, 16, and 19 have been amended to more particularly point out and distinctly claim the invention. No new matter has been added. In view of the remarks that follow, claims 1-21 are respectfully submitted for consideration.

Claims 1-2, 4, 6-8, 10, 12-13, 15-17, 19, and 21 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,453,358 of Michels et al. ("Michels"). Applicants respectfully traverse this rejection, because the claims recite subject matter that is neither disclosed nor suggested in the cited art.

Claim 1, upon which claims 2-6 depend, is directed to a table search device. The device includes a table having a plurality of entries. The device also includes a cache having a subset of entries of the plurality of entries of the table. The device further includes a search engine configured to first search the cache in a first number of search cycles and then search the table in a second number of search cycles based on search results of the cache. The search engine is connected to the table and the cache.

Claim 7, upon which claims 8-12 depend, is directed to a table search system. The table search system includes a table means for storing a plurality of entries. The table search system also includes a cache for storing a subset of entries of the plurality of

entries of the table means. The table search system further includes a search engine means for initially search the cache means in a first number of search cycles and then searching the table means in a second number of search cycles based on search results of the cache means.

Claim 13, upon which claims 14-15 depend, is directed to a method for performing a table lookup. The method includes creating a table having a plurality of entries. The method also includes creating a cache having a subset of entries of the plurality of entries of the table. The method further includes searching, by a search engine, the cache in a first number of search cycles. The method additionally includes searching, by the search engine, the table in a second number of search cycles based on search results of the cache.

Claim 16, upon which claims 17-21 depend, is directed to a network switch. The network switch includes an ARL table having a plurality of entries. The network switch also includes an ARL cache having a subset of entries of the plurality of entries of the ARL table. The network switch further includes a search engine configured to first search the ARL cache in a first number of search cycles and then search the ARL table in a second number of search cycles based on search results of the ARL cache. The search engine is connected to the ARL table and the ARL cache.

It is respectfully suggested that the cited art of Michels does not disclose or suggest all of the elements of any of the presently pending claims. Michels states that it uses pipelining, which it defines as connecting search engines in series. Michels asserts

that by pipelining search engines, increased throughput can be achieved. Michels posits that it is another aspect of Michels' invention to permit each of the search engines to perform concurrent source and destination searches of the lookup table.

Michels is directed to a network switching device with concurrent key lookups. The switching device includes multiple binary search engines coupled in series including one or more precursor search engines, and a final stage binary search engine.

Claim 1 recites, in part, "a search engine configured to first search the cache in a first number of search cycles and then search the table in a second number of search cycles based on search results of the cache," claim 7 recites, in part, "search engine means for initially search the cache means in a first number of search cycles and then searching the table means in a second number of search cycles based on search results of the cache means," claim 13 recites, in part, "searching, by the search engine, the table in a second number of search cycles based on search results of the cache," and claim 16 recites, in part, "a search engine configured to first search the ARL cache in a first number of search cycles and then search the ARL table in a second number of search cycles based on search results of the ARL cache." Michels does not teach at least these features of the present invention.

The Office Action cites Michels Figure 3. Figure 3 of Michels depicts two search engines. Neither of those two engines both searches the cache and searches the table based on search results of the cache. However, the claims recite a search engine that performs both searches. Accordingly, Michels does not have a feature that corresponds

to the claimed search engine. Thus Michels does not teach at least these features of claims 1-2, 4, 6-8, 10, 12-13, 15-17, 19, and 21.

Claims 3, 5, 9, 11, 14, 18, and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Michels. The Office Action states Michels teaches all of the elements of the claims except that the first number of search cycles used to search the cache is less than the second number of search cycles used to search the table. Applicants respectfully traverse this rejection.

Claims 3, 5, 9, 11, 14, 18, and 20 depend from claims 1, 7, 13, and 16, and thus are patentable for at least the reasons those claims are patentable, as explained above.

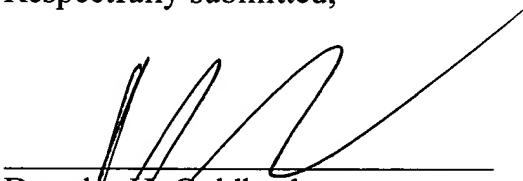
Additionally, the Office Action asserts that it would have been obvious to modify Michels to have a different number of search cycles, to provide a high-speed network switching device that would quickly and efficiently search through address lookup tables without wasted memory cycles of a search engine. Applicants respectfully disagree. The idea that Michels is wasting memory cycles is not apparent to one of ordinary skill in the art either from Michels disclosure nor from an examination of the binary search method Michels proposes. Michels, to the contrary, suggests that it can perform multiple **concurrent** searches to obtain source and destination addresses simultaneously and without wasted memory cycles. If the only basis upon which the Office Action concludes that Michels was wasting memory cycles is the present application, such a motivation is being taken from an improper source and is improper hindsight reconstruction. It is improper to use an applicant's disclosure in that manner.

Therefore, for at least the reasons discussed above, Applicants respectfully submit that claims 3, 5, 9, 11, 14, 18, and 20 are not rendered obvious by Michels.

In view of the above amendments and remarks, it is respectfully submitted that each of claims 1-21 recite subject matter that is neither disclosed nor suggested in the cited prior art. It is therefore respectfully requested that claims 1-21 be allowed, and that this application be passed to issue.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

  
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